



TCLAD
a POLYTRONICS company

PRODUCT DATASHEET



SMTB Surface Mount Thermal Bridge Devices

Epoxy & Terminal Series

SMTB Series Surface Mount Thermal Bridge Devices

Description

Surface mountable thermal bridge, SMTB, is a kind of heat spreader to enhance heat sink effect of whole printed wired board. That would help to save total cost of thermal solution and to save total space of final product.

Within benefits of lead frame structure, thermal conduction core material and functional molding compound, this part present with high thermal conductive and electrical insulated advantages, that could be widely using for most electro device such a high power and high-density integrated circuit applications.



Features

- Surface mount and easy to process
- Low thermal resistance
- RoHS compliant & halogen-free
- High voltage withstand
- Broad operating temperature

Application

- Power electronics
- Electric motors
- Servers and personal computers
- Home appliance
- Heater element to heat spreader

Environmental Compliance

Regulation	Standard
	2011/65/EU
	IEC 61249-2-21:2003

Electrical Characteristics

Epoxy Transfer Molding Package

Part Number	Thermal Resistance [†] (°C/W)	Capacitance [pf, 2MHz]	Breakdown Voltage DC (KV)
SMTB2114P30E	4.0	< 3.5	> 3.0
SMTB3123P30E	1.1	< 5.0	> 3.0

Metal Terminal Package

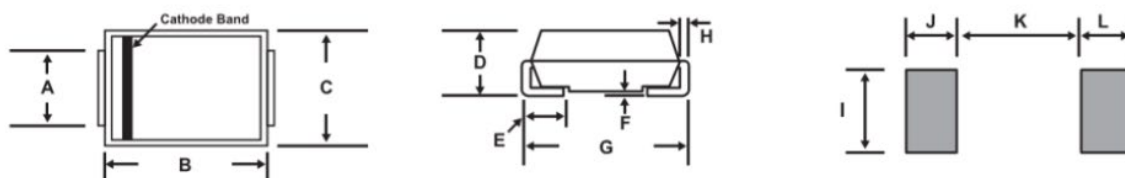
Part Number	Thermal Resistance [†] (°C/W)	Capacitance [pf, 2MHz]	Breakdown Voltage DC (KV)
SMTB2920P30M	0.7	< 8.0	> 0.6

[†] Thermal resistance: typical value, refer to the raw material specification.

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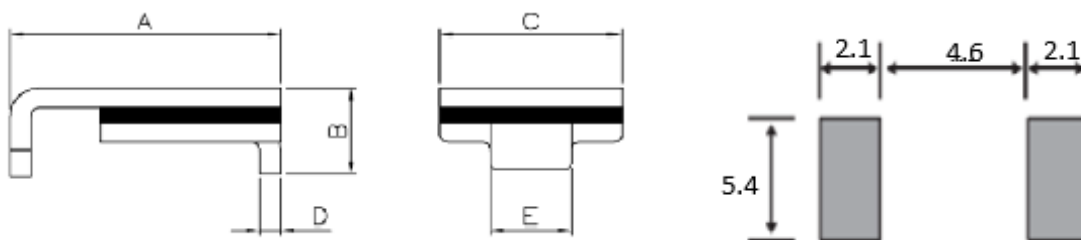
Physical Dimension (mm)

Epoxy Transfer Molding Package



	SMTB2114P30E		SMTB3123P30E	
	Min	Max	Min	Max
A	1.90	2.20	2.80	3.20
B	4.35	4.85	6.60	7.11
C	3.30	3.94	5.59	6.22
D	2.13	2.44	2.20	2.80
E	0.75	1.52	0.26	1.52
F	0.02	0.20	-	0.20
G	5.10	5.60	7.75	8.13
H	0.15	0.30	0.15	0.31
I	2.26	-	3.30	-
J	2.16	-	2.40	-
K	-	2.74	-	4.20
L	2.16	-	2.40	-

Metal Terminal Package



	SMTB2920P30M	
	Min	Max
A	6.70	8.00
B	-	3.00
C	4.80	5.44
D	0.50	0.71
E	2.16	2.46

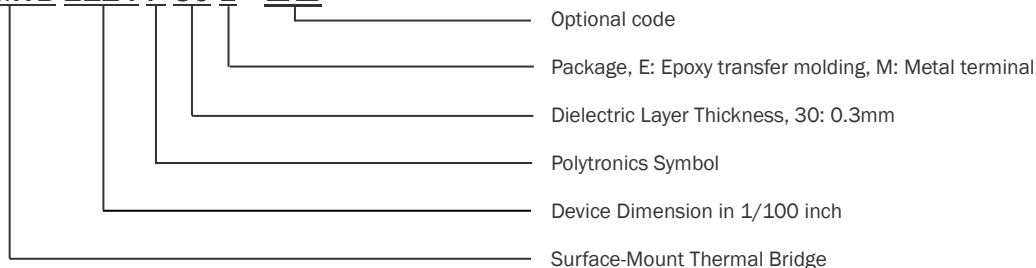
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Environmental Specifications

Operating/Storage Temperature	-50°C to +150 °C
Solvent Resistance	MIL-STD-202, Method 215
Vibration	MIL-STD-883C, Method 2007.1, Condition A No structural damage and functional failure
Moisture Level Sensitivity	Level 1, J-STD-020C

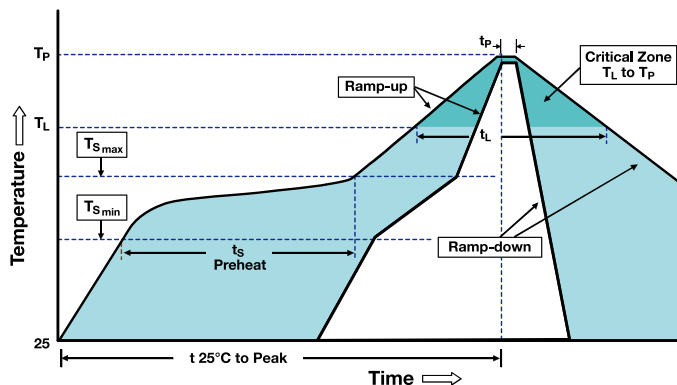
Part Number System

SMTB 2114 P 30 E - □□



Soldering Parameters

Reflow Soldering	Pb-free assembly
Average Ramp-Up Rate ($T_{s_{max}}$ to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{s_{min}}$)	150°C
-Temperature Max ($T_{s_{max}}$)	200°C
-Time ($T_{s_{min}}$ to $T_{s_{max}}$)	60-120 seconds
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20 seconds max.
Ramp-Down Rate	6°C /second max.
Time 25°C to Peak Temperature	8 minutes max.



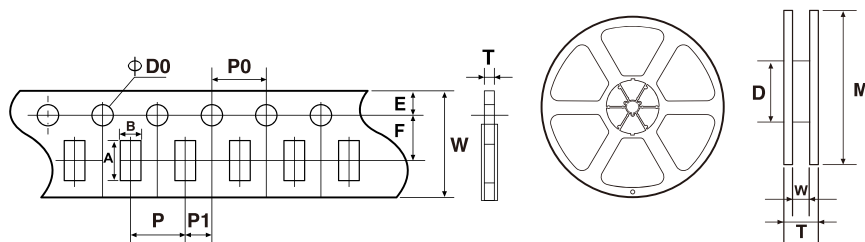
Note 1: The temperature shown above is the top-side surface temperature of the device.

Note 2: If the soldering temperature profile deviates from the recommended profile, devices may not meet the performance requirements

Tape & Reel Specification (mm.)

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Devices are packaged per EIA481 and EIA-2 standard



Paper tape measurements

Size	A	B	W	F	E	P	P0	P1	D0	T
2114	3.76±0.20	5.69±0.20	12.0±0.20	5.5±0.05	1.75±0.10	8.0±0.10	4.0±0.10	2.0±0.05	1.5±0.10	2.67±0.10
3123	6.10±0.20	8.31±0.20	16.0±0.20	7.5±0.05	1.75±0.10	8.0±0.10	4.0±0.10	2.0±0.05	1.55±0.10	2.90±0.10
2920	6.10±0.20	8.31±0.20	16.0±0.20	7.5±0.05	1.75±0.10	8.0±0.10	4.0±0.10	2.0±0.05	1.55±0.10	2.90±0.10

Reel measurements

Size	M	T	D
2114/3123/2920	330.0±2.0	16.0±2.0	100±1.0

Packaging Quantity

Part Number	Tape & Reel Quantity
SMTB2114P30E	3000
SMTB3123P30E	3000
SMTB2920P30M	3000

Disclaimer

- Caution: Operation beyond the specified rating may result in damage and possible arching.
- Customers should evaluate and test the properties of thermal bridge devices independently to verify and ensure that their individual applications will be met.
- Specifications and data are subject to change without notice.